Open-Source Software Practice

Lab 06. JavaScript Advanced

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Regarding the Team Formation

- ## Adjustment Stage

  - If you have concerns about the team communication, please send an iCampus message or e-mail to professor and (jmjo@g.skku.edu) me (Jiwon Choi, jasonchoi3@g.skku.edu) until today!!

  - Send me the language of your preference (Korean or English). If you prefer English, we will try to put you in an "international" team (again, random). If you prefer Korean, we will try to put you in a Korean team.

Goals

- Setup Node.js Project

- Scrape web page and extract useful information

- Develop useful CLI program with node.js

npm commands

- Basic npm commands

  - `npm init`

  - `npm install`

  - `npm uninstall`

  - `npm test`

  - `npm start` …

- Initialize npm project

  - Type `npm init` in terminal

package.json
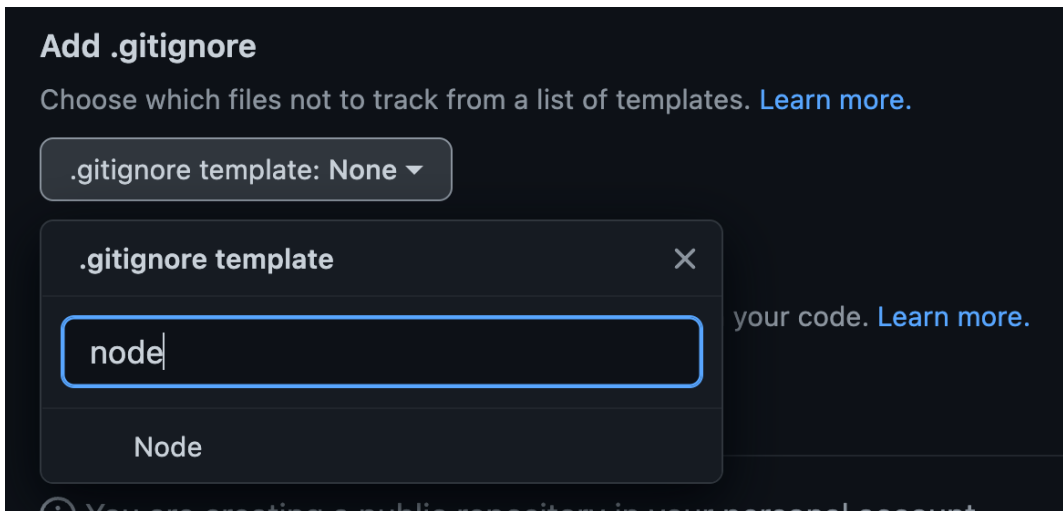
- Let's see generated package.json

```json
{
  "name": "skku-menu",
  "version": "1.0.0",
  "description": "",
  "main": "main.js",
  "scripts": {
    "test": "echo \"Error: no test specified\" && exit 1"
  },
  "author": "",
  "license": "ISC",
}
```

.gitignore

- ## node_modules

  - Dependencies not be uploaded to github!

  - Append `node_modules`

  - Recommend to use Node templates while creating new repository

Three Installation Types

- ## Local installation
  - `npm install {package_name}`

- ## Local dev installation
  - `npm install {package_name} --save-dev`

- ## Global installation
  - `npm install –g {package_name}`

Mini Project

- ## Let's practice other scenario that are similar to those we learned in Lecture Session.

- ## Scenario

  - ### I want to check out the recent notice in skku.edu on the terminal.

[행사/세미나] [행사/세미나] [창업지원단 캠퍼스타운] 학생 창업멘토링 King-Toring 10월 참여자 모집 No.16038 ｜ 박은서 ｜ 2022-10-04 ｜ 조회수0	NEW ⤓
[행사/세미나] "제로 트러스트와 클라우드 보안" - 서진원박사(구글클라우드) 비교과 전문가 특강 No.16037 ｜ 김장현 ｜ 2022-10-04 ｜ 조회수1431	⤓
[행사/세미나] 성균관대학교 인공지능혁신공유대학사업단 "2022년 캡스톤 디자인 및 AI 해커톤 경진대회" 개최 No.16036 ｜ 김장현 ｜ 2022-10-04 ｜ 조회수1071	NEW ⤓
[행사/세미나] [미국 사우스캐롤라이나 대학] Dr. Omrane Guedhami 세미나 안내 No.16035 ｜ 박승오 ｜ 2022-10-04 ｜ 조회수746	NEW ⤓
[입학] [에너지과학과] 2023학년도 1학기 대학원 신입생을 위한 입학설명회(오늘 오후2시) No.16034 ｜ 김소빈 ｜ 2022-10-04 ｜ 조회수543	NEW
[채용/모집] [양자정보연구지원센터] 2022년 4차 신진연구인력 연수프로그램 연수생 모집 안내 No.16033 ｜ 양자정보인력양성 ｜ 2022-10-04 ｜ 조회수795	⤓
[일반] [문화상품권 증정]학생성공역량 및 학습경험 설문조사(~10/14) No.16032 ｜ 대학혁신과공유센터 ｜ 2022-10-04 ｜ 조회수2656	⤓
[채용/모집] [바이오메디컬글로벌인재양성사업]보건복지부 지원 대학원생 해외파견 연수자 모집(~10/30) No.16031 ｜ 강보람 ｜ 2022-10-04 ｜ 조회수1020	⤓

HTML Code

- F12 -> Source

Download HTML from a URL

- Notice page link

  - https://www.skku.edu/skku/campus/skk_comm/notice01.do

- Check user agent of your browser

  - https://www.whatismybrowser.com/detect/what-is-my-user-agent/

- Let's write html download code

Download HTML from a URL

```javascript
const https = require("https");
const url = `https://www.skku.edu/skku/campus/skk_comm/notice01.do`;
const header = {
    headers: {
        "User-Agent": "..."
    }
}
https.get(
    url, header, (res) => {
    let data = "";
    res.on("data", (chunk) => {
        data += chunk;
    });
    res.on("end", () => {
        console.log(data);
    });
});
```

Parse HTML

- ## Install html parser

  - `npm install node-html-parser`

- ## Import `node-html-parser`

  ```javascript
  const parser = require("node-html-parser");
  ```

Parse HTML

- Notice titles are in <a> tag under <dt> tag that has a class attribute "board-list-content-title"

Parse HTML

```javascript
res.on("end", () => {
    const root = parser.parse(data);
    const list = root.querySelectorAll(".board-list-content-title > a");
    list.forEach((item) => {
        console.log(item.innerText.trim());
    });
});
```

Final Code

```
1  const https = require("https");
2  const parser = require("node-html-parser");
3  const url = `https://www.skku.edu/skku/campus/skk_comm/notice01.do`;
4  const header = {
5      headers: {
6          "User-Agent": "Mozilla/5.0 (Macintosh; Intel Mac OS X 10_15_7) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/105.0.0.0 Safari/537.36"
7      }
8  }
9  https.get(
10     url, header, (res) => {
11         let data = "";
12         res.on("data", (chunk) => {
13             data += chunk;
14         });
15         res.on("end", () => {
16             const root = parser.parse(data);
17             const list = root.querySelectorAll(".board-list-content-title > a");
18             list.forEach((item) => {
19                 console.log(item.innerText.trim());
20             });
21         });
22     }
23 );
24
25
```

Results

- `node main.js`

```
● (base)  jasonchoi3    ~/git/ossp6    node main.js
[미국 사우스캐롤라이나 대학] Dr. Omrane Guedhami 세미나 안내
카운슬링센터(인사캠) 시간제 상담원 채용
경영대학과 美 사우스캐롤라이나 경영대학 국제경영 분과의 복수학위 박사과정 설명회 안내
성균관대학교 총괄지원팀 직원(비서/사무보조) 채용 공고
한국 축산 데이터톤 경진대회
일반대학원 경제학과 선배들과 함께하는 대학원 진학, 진로 등 슬기로운 대학원 생활 설명회(2022. 10. 5.(수), 18시)
[문화상품권 증정]학생성공역량 및 학습경험 설문조사(~10/14)
[좋은민주주의연구센터] 공동국제학술회의 개최
k-디지털 트레이닝 인공지능 IT실무교육과정 모집 설명회
LINC 3.0 1차년도 SKKU 기술혁신자문 프로그램 2차 모집 공고(~9/30(금))
```

Develop a Command-line Interface

1. Add "`#!/usr/bin/env node`" on the first line of `main.js`.

```
JS main.js    ×

JS main.js > ⬡ https.get() callback > ⬡ res
  1    #!/usr/bin/env node
  2
```

2. Modify `package.json` as follows:

```
 11        author  ,
 12        "license": "ISC",
 13        "description": "",
 14        "bin": {
 15            "notice": "main.js"
 16        }
 17    }
```

- This "`bin`" property means that when this package is installed, you will expose a terminal command "`notice`" which runs "`main.js`".

Develop a Command-line Interface

3. npm pack

- This will pack your code to a self-contained package.

4. npm install ossp6-1.0.0.tgz -g

- This will install your package globally.

5. notice

Summary: Javascript Advanced

- You can reuse Javascript packages to speed up your development.

  - Don't reinvent the wheel.

- Using external packages introduces a lot of versioning and dependency issues, but a package manager will resolve them.

  - Node Package Manager or NPM

- *package.json* contains the metadata of your project. You must include this file in your project.

- We first developed a small but useful command line tool using Javascript.